UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,580	11/18/2003	Ralph Mocikat	080306-000100US	6256

20350 7590 10/18/2007

TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER	
WOODWARD, CHERIE MICHELLE	
ART UNIT	**PAPER NUMBER**
1647	
MAIL DATE	**DELIVERY MODE**
10/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/716,580	MOCIKAT, RALPH	
	Examiner	Art Unit	
	Cherie M. Woodward	1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 August 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-9,11-17 and 29* is/are pending in the application.

4a) Of the above claim(s) *29* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-9 and 11-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/14/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Formal Matters

1. Applicants Response and Amendments filed 6 August 2007 are acknowledged and entered. Claims 1-5, 7-9, 11-17 and 29 are pending. Claims 6, 10, 18-28, and 30 have been cancelled by Applicant. Claim 29 is withdrawn as being directed to a non-elected invention. Claims 1-5, 7-9 and 11-17 are under examination. This Office Action is NON-FINAL.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 14 August 2007 has been being considered by the examiner. A signed copy is attached hereto.

The examiner also notes that an EPO machine translation has become available for German Patent Application DE 4406512C1, cited in the IDS filed 18 November 2003. Applicant did not provide a translation of the document. However, the examiner has now considered the full document in light of the public availability of the EPO translation. A copy of the translation is attached.

Claim Objections/Rejections Withdrawn

3. The objections/rejections to claims 6 and 10 are withdrawn as moot in light of Applicant's cancellation of claim 10,

4. The objection to claims 1-5, 7-9 and 11-17 are withdrawn in light of Applicant's amendment to the claims.

5. The rejection of claims 1-5, 7-9and 11-17 under 35 U.S.C. 112, first paragraph, scope of enablement, is withdrawn.

6. The rejection of claims 1 and 12 under 35 U.S.C. 112, second paragraph, as being indefinite because of the term "derived," is withdrawn in light of Applicant's amendment.

7. The rejection of claims 1-5, 7-9 and 11-17 under 35 U.S.C. 112, second paragraph, as being indefinite because of the phrase "at least 1.5kb," is withdrawn.

Claim Rejections Maintained

Claim Rejections - 35 USC § 112, First Paragraph

Written Description

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 1-5, 7-9 and 11-17 remain rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

Applicant argues that the common components of the vector are provided and that the skilled artisan would have sufficient common knowledge of the common components of the claimed vector and how to acquire them (Remarks, p. 5, last paragraph). Applicant also argues that the distinguishing characteristics of the claimed vectors are described by way of reciting the common components of the vector (Remarks, p. 6, first paragraph). Applicant also states that "such characteristics are also well known to those of skill in the art at the time of the filing of this application" (Remarks, p.6, third paragraph). Applicant argues that by recognizing that all of the required components of the vector can be readily made and that the assembled vector can be tested for function, that one of skill in the art would "reasonably conclude" that the inventor was in possession of the vector at the time the Application was filed (Remarks, p. 6, first paragraph). Applicant also argues that the one species described is sufficient for the representation of the entire genus claimed (Remarks, p. 6, last paragraph to p. 7, first paragraph). Applicant's arguments have been fully considered, but they are not persuasive.

Applicant's arguments are based on the proposition that the genera of claimed vectors can be made by one of skill in the art by obtaining the required components. However, Applicant has not shown or provided any evidence that Applicant was in possession of the claimed genera at the time the application was filed. Rather, Applicant has shown that by making, experimenting, and testing the "characteristic components" of the invention, one of skill in the art may thereby obtain possession. However, it is well understood that possession may not be shown by merely describing how to obtain possession of members of the claimed genus or how to identify their common structural features (see, Univ. of Rochester v. G.D. Searle & Co., 358 F.3d 916, 927, 69 USPQ2d 1886, 1895 (Fed. Cir. 2004); accord Ex Parte Kubin, 2007-0819, BPAI 31 May 2007, opinion at p. 16, paragraph 1).

One species of the claimed invention is taught on pages 13-14 of the specification (labeled pages 17 and 18) as a vector comprising pSP72(ΔEV)-mGM-CSF (ΔL) cloned into pSVgpt-huγ1-A5. While

"examples explicitly covering the full scope of the claim language" typically will not be required, a sufficient number of representative species must be included to "demonstrate that the patentee possessed the full scope of the [claimed] invention." Lizardtech v. Earth Resource Mapping, Inc., 424 F.3d 1336, 1345, 76 USPQ2d 1724, 1732 (Fed. Cir. 2005). In the instant case, there is only one example of the "characteristic components" comprising the claimed genus of vectors.

In the absence of sufficient recitation of distinguishing characteristics, the specification does not provide adequate written description of the claimed genera of vectors, including,, a genera of vectors encoding generic cytokine-immunoglobulin fusion proteins; a genera of vectors encoding a genera of immunoglobulins; a genera of vectors comprising DNA encoding a cytokine; a genera of vectors encoding a genera of marker genes; a genera of vectors encoding a genera of enhancers; a genera of vectors encoding a genera of nucleic acids homologous to a region comprising the Cμ or Cκ enhancer; a genera of vectors encoding a genera of bacterially compatible regulatory units; a genera of vectors encoding a genera of domains from a human immunoglobulin chain; a genera of vectors encoding a genera of interleukins; a genera of vectors encoding a genera of interferons; a genera of vectors encoding a genera of colony-stimulating factors; a genera of vectors encoding a genera of lymphokines; and a genera of vectors encoding a genera of growth factors. One of skill in the art would not recognize from the disclosure that the applicant was in possession of the claimed genus at the time the application was filed.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1-5, 7-9, 11, and 15-17 remain rejected under 35 U.S.C. 102(e) as being anticipated by Polack et al., US Patent 6,521,449 (18 February 2003, benefit to 12 September 1996).

Applicant argues that the limitation of the claims cannot be found in the '449 patent. Applicant argues that "the region of at least 1.5kb which is homologous to a region of the μ intron or the κ intron cannot be found in the Polack reference" (Remarks p. 8). Applicant argues that the 2.6kb reference the

Examiner referred to in the Office action at p. 13, last paragraph bridging pages 13 and 14, refers instead to the EBNA1 sequence and not to a sequence homologous to a region of a μ or κ intron (Remarks p. 8). Applicant's arguments have been fully considered, but they are not persuasive.

Applicant is requested to refer to p. 13 of the previous Office Action, last paragraph, where the Office Action clearly states that the μ and κ locus introns are taught at column 4, lines 37-54. The area pointed to by the examiner teaches "[a] gene construct containing, in functional association, at least: (a) (i) a combination of two enhancer elements of the immunoglobulin kappa locus, namely the kappa intron enhancer (kappa Ei) and the kappa 3' enhancer (kappa E3'); or (ii) a combination of two enhancer elements of the immunoglobulin heavy chain mu locus, namely mu Ei and the mu E3' enhancer region located 3' of C alpha; or (iii) a combination of one or more of these enhancer elements of (ii) together with one or more of the aforementioned elements of the immunoglobulin kappa locus; or (iv) the single enhancer element of the immunoglobulin lambda locus; or (v) a combination of this enhancer element of (iv) together with one or more of the aforementioned elements of the immunoglobulin kappa locus; or (vi) a combination of this enhancer element of (iv) together with one or more of the above elements of the immunoglobulin heavy chain mu locus..."

Instant claim 1(a) sets forth the limitation "a region of at least 1.5kb which is homologous to a region of the μ intron or the κ intron;..." Instant claim 1(a) does not impose a limit on the length of the μ intron or the κ intron themselves. Rather, the claim reads that the region of at least 1.5kb be homologous "to a region" of the μ intron or the κ intron. This is interpreted by the Examiner to mean that any fragment, in whole or in part, of the entire length of or any particular region of the μ intron or the κ intron may comprise part of the region of at least 1.5kb, so long as the fragment is homologous to the μ intron or the κ intron. In other words, the region selected from the μ intron or the κ intron does not have to comprise the minimum of all 1.5 kilobases, but rather the "at least 1.5 kb" size must merely include a fragment homologous to a region of the μ intron or the κ intron.

Support for the Examiner's interpretation/reading comes directly from the instant specification and from the German patent application, DE 4406512 (for which Applicant has not provided an English translation at any point in this prosecution). Page 4 of the instant specification (listed as page 9 on the page, itself) states that "[c]onstruction of the vector according to the invention is based on the integration vectors described in DE 44 06 512. For complete disclosure, this German Patent Document is incorporated herein by reference in its entirety."

The machine translation of DE 4406512 (attached hereto) states that "the human constant IgG1 gene segment becomes a 2.9KB EcoRI PvuII fragment into the vector split with EcoRI and BamHi

pSvgpt...a KB-HindIII-fragment [is] inserted, which contains part of the mouse mu [μ] introns, including mu [μ] enhancers as well as the JH4 segment..." (p. 3 of the translation specification, last paragraph, Example 1). "...Finally, the 0.7KB long sequence is eliminated downstream [next to, by, or near] the EcoRI site by splitting EcoRI and SacI from the vector and [replacing it with] a 1.4 KB fragment from the murine mu [μ] intron, so that the entire homology flank exhibits a length of 3.0KB..." (p. 4 of the translation specification, first paragraph, Example 1). The DE 4406512 patent application, as incorporated by reference in the instant specification, teaches that only a small part of the homologous μ intron enhancer region is required in a larger sequence of at least 1.5KB, thus, supporting the Examiner's interpretation that any fragment, regardless of size, from a μ intron or the κ intron, incorporated into the vector, anticipates the instant invention. As such, and absent any evidence to the contrary, the μ intron and the κ intron enhancer regions taught by the '449 patent anticipate all of the limitations of the instant claims.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner

to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. Claims 1-5, 7-9, 11-13, and 15-17 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Polack et al., US Patent 6,521,449 (18 February 2003, benefit to 12 September 1996) in view of Levy et al., US Patent 6,099,846 (8 August 2000, benefit to 14 April 1995) and Gillies et al., US Patent 5,650,150 (22 July 1997, benefit to 7 November 1991).

Applicant argues that the '449 patent and the '150 patent do not provide support for the limitation of the region of at least 1.5 kb which is homologous to a region of the p intron or the k intron recited in (a) of claim 1. Applicant's argument has been fully considered, but is not persuasive.

Applicant set forth this same argument regarding the '449 base reference, which is addressed above, in detail. Applicant's argument is not persuasive because the '449 reference does in fact teach every limitation of the instant claims (see above).

New Claim Rejections

Claim Rejections - 35 USC § 102

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

17. Claims 13 and 14 are also rejected under 35 U.S.C. 102(e) as being anticipated by Polack et al., US Patent 6,521,449 (18 February 2003, benefit to 12 September 1996).

Instant claims 13 and 14 are drawn to constant regions of secretory antibodies and membrane-bound antibodies.

The '449 patent teaches as set forth in the Office Action of 5 March 2007 and as set forth above. Immunoglobulins containing kappa light chains that persist in membrane-bound or secreted forms include IgG, IgM, IgE, IgA, and IgD. The expression as membrane-bound or in secreted form is an inherent property of these immunoglobulins. See, for exemplary purposes only, Harlow et al., (Antibodies A Laboratory Manual, Cold Spring Harbor Press, 1988, pp. 10-11, especially Table 2.1 on page 10), or Coutinho et al., (EMBO J. 1982;1(10):1251-1257, especially p. 1254, column 2 to p. 1255, column 1). Thus, Applicant's claims refer to any immunoglobulin constant region from an IgG, IgA, or IgE, for claims 13 and 14 and additionally IgM or IgD for claim 14. It is noted that IgG, IgA, and IgE may persist

in either membrane-bound for or secretory form (see, for exemplary purposes only, Coutinho, *supra*, especially p. 1254, column 2 to p. 1255, column 1). The '449 patent teaches kappa light chains, which may be expressed in any of IgG, IgM, IgA, IgE, and IgD (see, for exemplary purposes only, Harlow et al., supra, at Table 2.1 on page 10).

18. Claims 1-5, 7-9, 11, 13-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Mucke et al., (Gene Therapy. 1997 Feb;4:82-92).

The claims are drawn to a vector or the expression of immunoglobulin-cytokine fusion proteins in malignant B-cells.

Mucke et al., teach vectors comprising gene constructs of cytokine-immunoglobulin fusion proteins expressed in malignant B-cells (abstract; p. 82, column 2, first full paragraph, as idiotype/GMCSF fusion proteins). Enhancers comprising enhancers from the human immunoglobulin κ locus, a promoter and polyadenylation site are taught at p. 83, column 1, second full paragraph; and especially Figure 1b, page 85, as immunoglobulin κE3' and κEi. Cytokine genes for IL-6, TNF, and GM-CSF are taught at p. 83, column 1, last paragraph; and Table 1. Marker genes that are selectable in eukaryotic B cells and contain a functional enhancer region are taught at Figure 1b, page 85, including the hygromycin resistance gene (hygR) (see also Figure 1a, p. 84). Vectors preferably containing sequences derived from bacterial vectors (i.e. lacZ) are taught at p. 85, column 1. A vector construct wherein the marker gene lacks an enhancer or contains a non-functional enhancer is taught at p. 85, Figure 1b.

Whether immunoglobulin constant regions are membrane-bound or in secreted form is an inherent property of these immunoglobulins. See, for exemplary purposes only, Harlow et al., (Antibodies A Laboratory Manual, Cold Spring Harbor Press, 1988, pp. 10-11, especially Table 2.1 on page 10), or Coutinho et al., (EMBO J. 1982;1(10):1251-1257, especially p. 1254, column 2 to p. 1255, column 1). Thus, Applicant's claims refer to any immunoglobulin constant region from an IgG, IgA, or IgE, for claims 13 and 14 and additionally IgM or IgD for claim 14. It is noted that IgG, IgA, and IgE may persist in either membrane-bound for or secretory form (see, for exemplary purposes only, Coutinho, *supra*, especially p. 1254, column 2 to p. 1255, column 1). The '449 patent teaches kappa light chains, which may be expressed in any of IgG, IgM, IgA, IgE, and IgD (see, for exemplary purposes only, Harlow et al., supra, at Table 2.1 on page 10).

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

20. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

21. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

22. Claims 1-5, 7-9 and 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mucke et al., (Gene Therapy. 1997 Feb;4:82-92) or Polack et al., US Patent 6,521,449 (18 February 2003, benefit to 12 September 1996), in view of Mocikat et al., (Immunology. 1995:84:159-163).

The Examiner finds the following:

a. The claims are drawn to a vector for the expression of immunoglobulin-cytokine fusion proteins in malignant B cells.

b. Mucke et al., and the '449 patent teach as set forth above.

c. Neither Mucke et al., nor the '449 patent teach the claimed vector using immunoglobulin constant regions from a mouse, rat, goat, horse, or sheep.

d. Mocikat et al., teach a vector for homologous recombination at the Ig locus (Figure 1; paragraph bridging pages 159-160). The vector of Mocikat et al., appears to contain all the

elements that Applicants' disclose or claim, with the exception of the incorporation of a cytokine gene. The vector contains a 2.3 kb fragment from the mouse μ intron (Figure 1; and Figure 3, p. 161; see also p. 160, column 1, first full paragraph) (compare instant claims 1 and 12).

e. The level of skill of those in the art encompasses skills in the field of molecular biology relating to the construction of vectors by standard and routine methodologies.

f. A person of ordinary skill in the art at the time the invention was made would have reasonably know that immunoglobulin-cytokine fusion proteins could be made using vector constructs in immortalized or malignant B cells. Further, a person of ordinary skill in the art would have been able to make the immunoglobulin-cytokine fusion proteins from recombinant sequences in vectors comprising any known sequences merely by using well-known methodologies and protocols, such as the ones taught by the '449 patent or Mucke et al., and the resulting structure and function of the vectors would have been predictable.

In view of the facts recited above, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the prior art elements according to known methods to yield predictable results. The prior art teaches all of the limitations of the claimed invention. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to create a vector comprising all the elements of the instant claims, as taught by Mucke et al., or the '449 patent, using mouse, rat, goat, horse or sheep immunoglobulin constant regions with predictable results.

The person of ordinary skill in the art could have combined the elements as claimed by known methods to produce a vector capable of expressing an immunoglobulin-cytokine fusion protein in malignant B cells, using a constant region from a mouse, rat, goat, horse, or sheep. One of skill in the art would have recognized that the results of the combination of vector components would have yielded nothing more than predictable results to one of ordinary skill in the art at the time the invention was made. This is demonstrated by the fact that by Mucke et al, and the '449 patent, teach all of the components in the prior art.

It would also have been obvious to a person of ordinary skill in the art at the time the invention was made to simply substitute one known element for another to obtain predictable results. Mucke et al., and the '449 patent, teach all of the required vector components, including a human immunoglobulin constant region. It would have been obvious and predictable to merely substitute a mouse constant region in the vector construct for the human constant region predictable results, due to the similarities in mouse and human constant regions, which are old and well known in the art. Both the level of skill in the art in

the field of molecular biology in vector construction and the actual construction of vectors by Mucke et al., and the '449 patent, make the substitution predictable.

Conclusion

23. The prior art made of record and not presently relied upon is considered pertinent to applicant's disclosure.

a. Kardinal et al., (Eur J Immunol. 1995 Mar; 25(3):792-797, Abstract only), teaches integration vectors for antibody chimerization by homologous recombination in hybridoma cells.

b. EP 0675203 (published 4 October 1995) (machine translation into English, attached) teaches integration vectors for the production of genes encoding recombinant antibodies (translation, specification p. 1, paragraph 1).

c. DE 4406512 (published 16 February 1995) (machine translation into English, attached) teaches integration vectors for producing genes which encode recombinant antibodies to vectors for producing recombinant antibodies.

d. Tao et al., (Nature. 1993 Apr 22;362(6422):755-8, Abstract only), teaches that by fusing a well-characterized tumor specific antigen, which is an antibody corresponding to the specific idiotype expressed on a murine B cell lymphoma, to GM-CSF, the tumor-derived idiotype can be converted into a strong immunogen capable of inducing idiotype-specific antibodies and of protecting recipient animals from challenge with an otherwise lethal dose of tumor cells.

NO CLAIM IS ALLOWED.
This Action is NON-FINAL.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cherie M. Woodward whose telephone number is (571) 272-3329. The examiner can normally be reached on Monday - Friday 9:00am-5:30pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Manjunath N. Rao can be reached on (571) 272-0939. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CMW
AU1647

/Gary Nickol/

Gary Nickol
Supervisory Patent Examiner, Art Unit 1646